AMENDMENT TO THE CLAIMS

1. (Currently Amended) An aqueous bath composition for the electroless deposition of copper molybdenum, comprising, in addition to water:

a soluble source of copper ions;

a soluble source of molybdenum ions; and

a reducing agent comprising boron;

wherein said composition is adapted to electrolessly produce a copper molybdenum deposit having a resistivity of less than 30 microohm.cm, and

wherein said soluble source of molybdenum ions comprises molybdic acid monohydrate ($H_2MoO_4.H_2O$).

2. (Original) A composition according to claim 1, wherein said copper molybdenum deposit has a resistivity of less than 10 microohm.cm.

3. (Original) A composition according to claim 1, wherein said composition is substantially devoid of alkali metals and alkaline earth metals.

4. (Original) A composition according to claim 1, wherein said soluble source of copper ions comprises copper sulfate.

5. (Original) A composition according to claim 4, wherein said copper sulfate comprises copper sulfate pentahydrate ($CuSO_4.5H_2O$) at a concentration of 2-10 g/l.

6. (Original) A composition according to claim 5, wherein said copper sulfate pentahydrate is at a concentration of 3-5 g/l.

7. (Canceled)

8. (Currently Amended) A composition according to claim ~~7~~1, wherein said molybdic acid monohydrate is present in said composition at a concentration of 0-5 g/l.

9. (Original) A composition according to claim 8, wherein said molybdic acid monohydrate is present at a concentration of 1.5-3 g/l.

10. (Currently Amended) A composition according to claim 1, wherein the reducing agent is selected from the group consisting of sodium borohydride, potassium borohydride, borane pyridine complex and a borazane selected from the group consisting of dimethylamineborane (DMAB), borane triethylamine (TEAB), DMAB-complex and TEAB-complex.

11. (Currently Amended) A composition according to claim 10, wherein said borazane is of the formula $R_xNH_y.BH_{(x+y)}$,

wherein x is an integer between 0 and 3,

wherein y is an integer between 0 and 3, and

wherein R is an organic group selected from the group consisting of methyl and ethyl.

12. (Original) A composition according to claim 10, wherein the reducing agent comprises dimethylamineborane.

13. (Original) A composition according to claim 12, wherein the reducing agent comprises a dimethylamineborane.complex.

14. (Original) A composition according to claim 13, wherein said dimethylamineborane complex is present at a concentration of 5-20 g/l.

15. (Original) A composition according to claim 14, wherein said dimethylamineborane complex is present at a concentration of 7-12 g/l.

16. (Original) A composition according to claim 11, further comprising tetra-methyl ammonium hydroxide (TMAH) at a concentration of 50-100 g/l.

17. (Original) A composition according to claim 1, further comprising ammonium hydroxide.

18. (Original) A composition according to claim 17, wherein said ammonium hydroxide is at a concentration of less than 20 ml/l.

19. (Original) A composition according to claim 1, wherein the pH is between 8-12.

20. (Original) A composition according to claim 19, wherein the pH is between 9-11.

21. (Original) A composition according to claim 1, wherein said composition is adapted to produce a copper molybdenum deposit having at least one of the following properties:

(i) a change in reliability as defined by mean-time-to-failure during electro-migration testing of more than a factor of ten;

(ii) a void density of less than $0.5/cm^2$;

(iii) a grain boundary diffusion coefficient of less than $10^{-8.3}$. $e^{-1.25\ ev/kT}$;

(iv) a grain boundary diffusion coefficient, D_0 of $10^{-8.3}$ cm/s; and

(v) a distribution of grain sizes having a standard deviation of less than 3 nm.

22. (Original) A composition according to claim 1, wherein said composition is adapted to electrolessly deposit copper molybdenum at a temperature of less than 60°C.

23. (Original) A composition according to claim 22, wherein said composition is adapted to electrolessly deposit copper molybdenum at a temperature of between 40°C to about 50°C.

24. (Original) A composition according to claim 1, further comprising a surfactant.

25. (Currently Amended) A composition according to claim 24, wherein said surfactant comprises at least one of ~~RE-610~~ Polyoxyethylene Alkyl Phenol Phosphate

Ester and ~~Triton X-100~~ $C_{14}H_{22}O(C_2H_4O)_n$ having an average number of ethylene oxide units per molecule of 9-10.

26. (Currently Amended) An aqueous bath composition for the electroless deposition of copper molybdenum, comprising, in addition to water:

a soluble source of copper ions;

a soluble source of molybdenum ions;

a soluble source of citrate ions; and

a reducing agent comprising boron; and

wherein said composition is adapted to electrolessly produce a copper molybdenum deposit having a resistivity of less than 300 microohm.cm, and

wherein said source of molybdenum comprises molybdic acid monohydrate($H_2MoO_4.H_2O$).

27. (Original) A composition according to claim 26, wherein said soluble source of citrate ions comprises sodium citrate.

28. (Original) A composition according to claim 26, wherein said copper molybdenum deposit has a resistivity of less than 100 microohm.cm.

29. (Original) A composition according to claim 26, wherein said composition is substantially devoid of alkali metals and alkaline earth metals.

30. (Original) A composition according to claim 25, wherein said soluble source of copper ions comprises copper sulfate.

31. (Original) A composition according to claim 30, wherein said copper sulfate comprises copper sulfate pentahydrate ($CuSO_4.5H_2O$) at a concentration of 2-10 g/l.

32. (Original) A composition according to claim 31, wherein said copper sulfate pentahydrate is at a concentration of 3-5 g/l.

33. (Canceled)

34. (Currently Amended) A composition according to claim ~~33~~26, wherein said molybdic acid monohydrate is present in said composition at a concentration of 0-5 g/l.

35. (Original) A composition according to claim 34, wherein said molybdic acid monohydrate is present at a concentration of 1.5-3 g/l.

36. (Currently Amended) A composition according to claim 26, wherein the reducing agent is selected from the group consisting of dimethylamineborane (DMAB), sodium hydroborate, potassium hydroborate, sodium borohydride, potassium borohydride, a borazane, and borane pyridine complex.

37. (Currently Amended) A composition according to claim 36, wherein said borazane is of the formula $R_xNH_y.BH_{(x+y)}$,

wherein x is an integer between 0 and 3,

wherein y is an integer between 0 and 3, and

wherein R is an organic group selected from the group consisting of methyl and ethyl.

38. (Original) A composition according to claim 26, wherein the reducing agent comprises dimethylamineborane.

39. (Original) A composition according to claim 38, wherein the reducing agent comprises a dimethylamineborane complex.

40. (Original) A composition according to claim 39, wherein said dimethylamineborane complex is present at a concentration of 5-20 g/l.

41. (Original) A composition according to claim 39, wherein said dimethylamineborane complex is present at a concentration of 7-12 g/l.

42. (Original) A composition according to claim 26, further comprising tetra-methyl ammonium hydroxide (TMAH) at a concentration of 50-100 g/l.

43. (Original) A composition according to claim 26, further comprising ammonium hydroxide.

44. (Original) A composition according to claim 43, wherein said ammonium hydroxide is at a concentration of less than 20 ml/l.

45. (Original) A composition according to claim 26, wherein the pH is between 8-12.

46. (Original) A composition according to claim 45, wherein the pH is between 9-11.

47. (Original) A composition according to claim 26, wherein said composition is adapted to produce a copper molybdenum deposit having at least one of the following properties:

(i) a change in reliability as defined by mean-time-to-failure during electro-migration testing of more than a factor of ten;

(ii) a void density of less than $0.5/cm^2$;

(iii) a grain boundary diffusion coefficient of less than $10^{-8.3}$. $e^{-1.25\ ev/kT}$;

(iv) a grain boundary diffusion coefficient, D_o of $10^{-8.3}$ cm/s; and

(v) a distribution of grain sizes having a standard deviation of less than 3 nm.

48. (Original) A composition according to claim 26, wherein said composition is adapted to electrolessly deposit copper molybdenum at a temperature of less than 60°C.

49. (Original) A composition according to claim 48, wherein said composition is adapted to electrolessly deposit copper molybdenum at a temperature of between 40°C to about 50°C.

50. (Original) A composition according to claim 26, further comprising a surfactant.

51. (Currently Amended) A composition according to claim 50, wherein said surfactant comprises at least one of ~~RE 610~~ Polyoxyethylene Alkyl Phenol Phosphate Ester and ~~Triton X-100~~ $C_{14}H_{22}O(C_2H_4O)_n$ having an average number of ethylene oxide units per molecule of 9-10.

52-92. (Withdrawn)